

**ABSTRACT OF THE DISCLOSURE**

Graphitic nanotubes, which include tubular fullerenes (commonly called "buckytubes") and fibrils, which are functionalized by chemical substitution, are used as solid supports in electrogenerated chemiluminescence assays. The graphitic nanotubes are chemically modified with functional group biomolecules prior to use in an assay. Association of electrochemiluminescent ruthenium complexes with the functional group biomolecule-modified nanotubes permits detection of molecules including nucleic acids, antigens, enzymes, and enzyme substrates by multiple formats.

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